S-69 – Visualization as a Historiographic Tool for Historians of Science & Technology

The History of Science and Technology

Organizers:

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Abstract:

In recent years, the technical means to collect ever more data about persons, publications, concepts and historical processes, and to visualize these data in increasingly sophisticated ways, have multiplied enormously. New fields such as “digital humanities” and “digital history” have emerged whose experts from various academic origins - ranging from linguistics and computer-linguistics and informatics to history, the philologies, and all the other humanities - try to define new compulsory disciplinary cores – so far without definitive results. The “digital humanities” are still searching for their paradigms, and history of science and technology still have to find their places in this new research arena.

In this session, all participants will have a look at some of the attempts to use new visualization techniques as historiographic tools to map both local and global trends and interconnections. An introductory talk by a leading visualization expert, Katy Börner (Indiana Univ.) will open up the whole panorama of current research in this direction. Each of the invited and contributed talks will portray at least one or several of these new techniques, provide exemplars with state-of-the-art standards, and discuss the various goals and problematiques that can be pursued with these techniques, but also look critically at their limits and in-built limitations. At the end of the session, a commentary by the main organizer of the symposium, historian of science & technology Klaus Hentschel (Univ. of Stuttgart) will summarize and analyze what had been presented and initiate a general discussion of the horizons reached and how to proceed further. This symposium will pursue the goal to make maximum use of the refined visualization tools currently available without losing track of Quellen-critique, reflexivity, and all the other older, but still valid standards of the humanities which have to be upheld in the process.

This session will be of key interest and open to all historians of science, technology and medicine interested in the use of digital techniques, such as the visualization of social network analysis and correspondence networks, citation and co-citation analysis and other scientiometric techniques, the mapping of upcoming new trends, of scientific landscapes and whole (inter)disciplinary formations, of research schools and teacher-pupil relations, prosopographic analysis and other forms of social history leading to big data in need of visual analysis. Sarah Bärtschi (Univ. Berne) will address how to visually represent and analyze the complex oeuvre of a single individual (Alexander von Humboldt). As will become obvious in the session, visualization is often the only means to come to grips with these big data. It will become equally clear, though, that visualization is no end
in itself but has to be interpreted and embedded in the visual cultures of interpreters yet to be formed. Therefore, this session is of critical importance to all subfields of history of science, technology and medicine.

**Keywords:** visualization – historiography – mapping of science – social network analysis – scientiometry.

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- Mario Taddei
- Stefan Jänicke
- David Chavalarias
- Sarah Bärtschi
- Matteo Valleriani